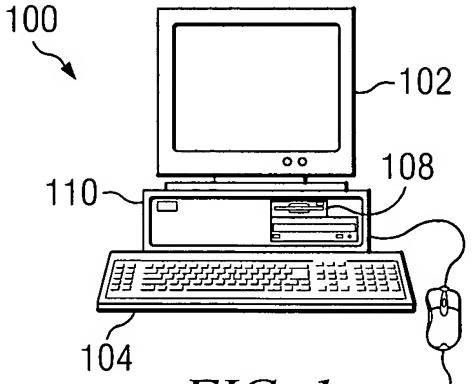
100
102
108
110
104
106

FIG. 1

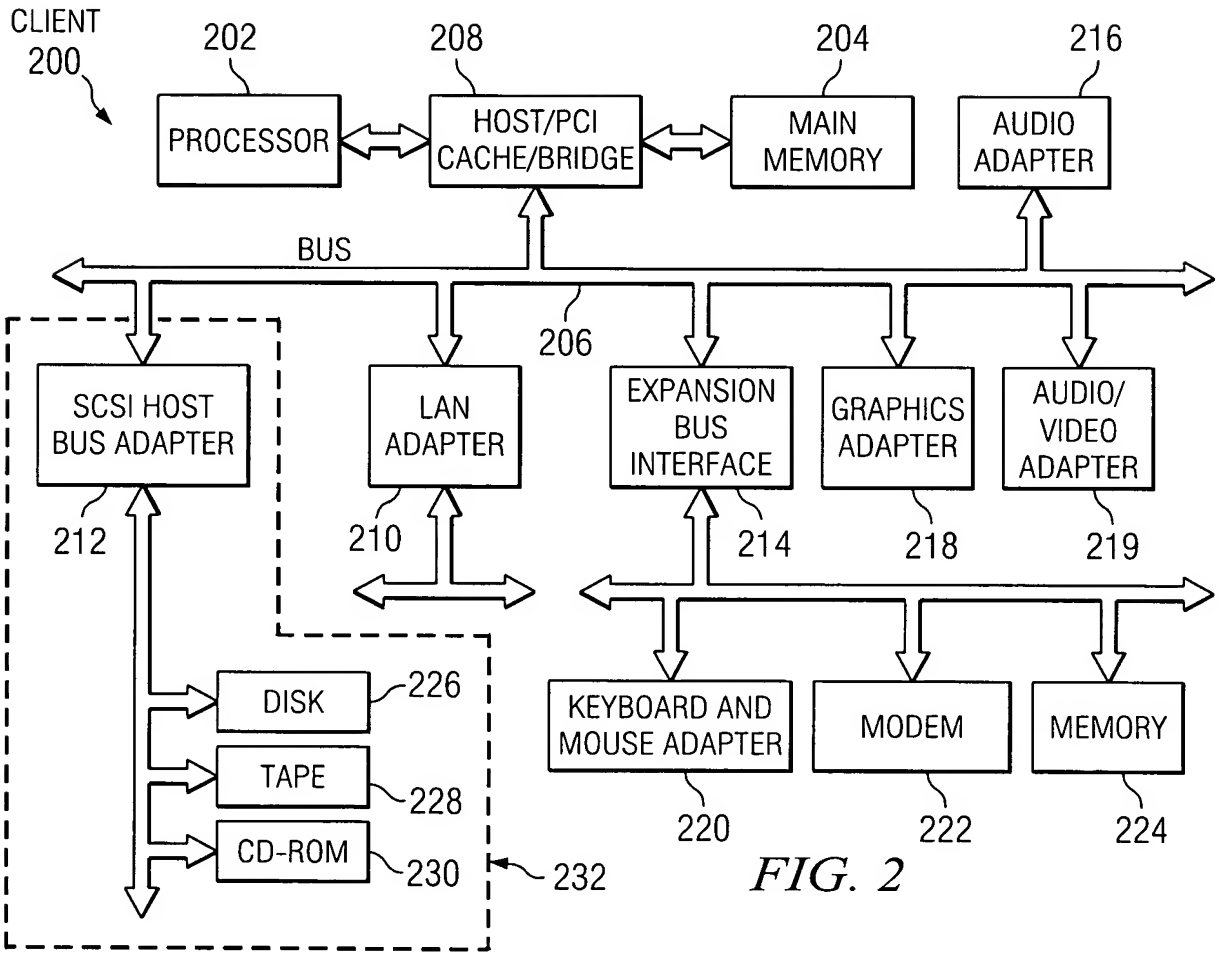
CLIENT
200
202
208
204
216
PROCESSOR
HOST/PCI CACHE/BRIDGE
MAIN MEMORY
AUDIO ADAPTER
BUS
206
SCSI HOST BUS ADAPTER
LAN ADAPTER
EXPANSION BUS INTERFACE
GRAPHICS ADAPTER
AUDIO/ VIDEO ADAPTER
212
210
214
218
219
DISK
226
TAPE
228
CD-ROM
230
232
KEYBOARD AND MOUSE ADAPTER
MODEM
MEMORY
220
222
224

FIG. 2

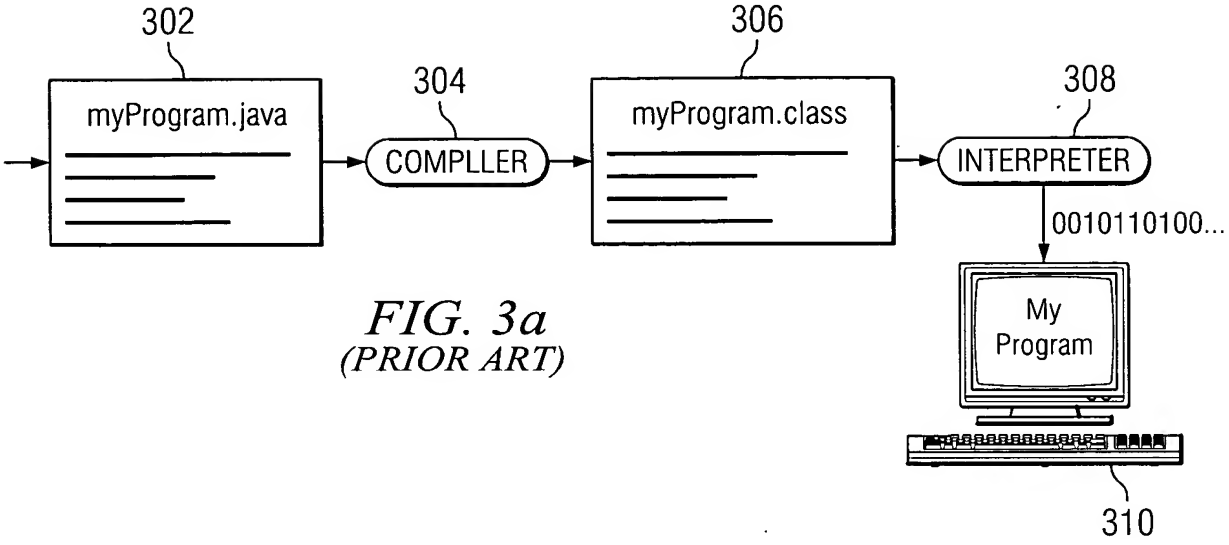

FIG. 3a
(PRIOR ART)

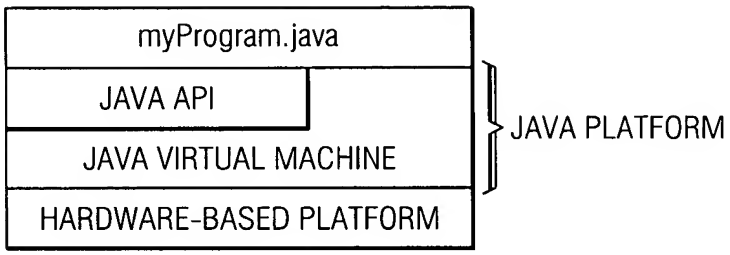

FIG. 3b
(PRIOR ART)

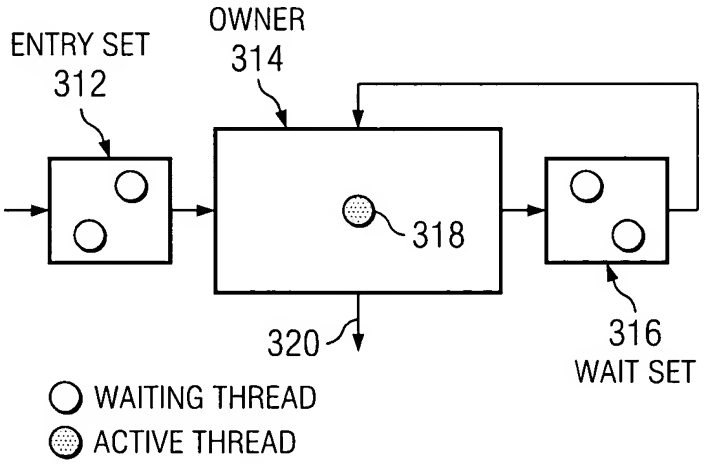

FIG. 3c

FIG. 4

Deadlock 1:

"inst: 1 - thd:0" of (sys:0x136B8718)(TID:0x4D3F158)
Holding Resource: java.lang.Object@4D7F028/4D7F030
Thread Waiting: "inst: 1 - thd:4" (sys:0x136C3490)(TID:0x4D3F018) } 401

"inst: 1 - thd:4" of (sys:0x136C3490)(TID:0x4D3F018)
Holding Resource: java.lang.Object@4D7EFE8/4D7EFF0
Thread Waiting: "inst: 1 - thd:3" (sys:0x136C3198)(TID:0x4D3F068) } 402

"inst: 1 - thd:1" of (sys:0x136B8A10)(TID:0x4D3F108)
Holding Resource: java.lang.Object@4D7F018/4D7F020
Thread Waiting: "inst: 1 - thd:0" (sys:0x136B8718)(TID:0x4D3F158) } 403

"inst: 1 - thd:2" of (sys:0x136B8D08)(TID:0x4D3F0B8)
Holding Resource: java.lang.Object@4D7F008/4D7F010
Thread Waiting: "inst: 1 - thd:1"(sys:0x136B8A10)(TID:0x4D3F108) } 404

"inst: 1 - thd:3" of (sys:0x136C3198)(TID:0x4D3F068)
Holding Resource: java.lang.Object@4D7EFF8/4D7F000
Thread Waiting: "inst: 1 - thd:2" (sys:0x136B8D08)(TID:0x4D3F0B8) } 405

		THREADS THAT HOLDS RESOURCES				
THREADS WAITING ON RESOURCES		inst:1 - thd:0	inst:1 - thd:1	inst:1 - thd:2	inst:1 - thd:3	inst:1 - thd:4
	inst:1 - thd:0		java.lang.Object @4D7F018/ 4D7F020			
	inst:1 - thd:1			java.lang.Object @4D7F008/ 4D7F010		
	inst:1 - thd:2				java.lang.Object @4D7EFF8/ 4D7F000	
	inst:1 - thd:3					java.lang.Object @4D7EFE8/ 4D7EFF
	inst:1 - thd:4	java.lang.Object @4D7F028/ 4D7F030				

FIG. 5

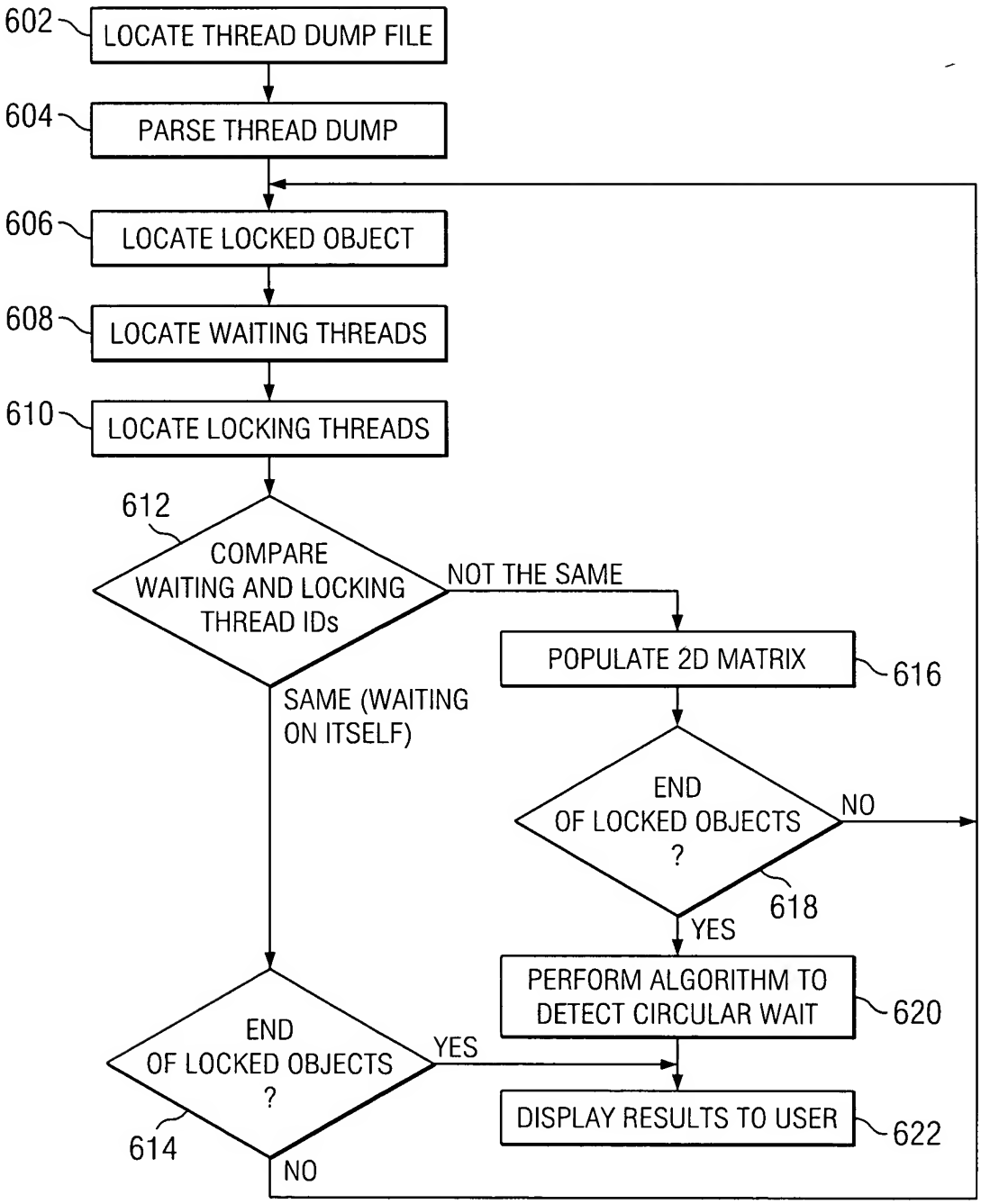
602
LOCATE THREAD DUMP FILE
604
PARSE THREAD DUMP
606
LOCATE LOCKED OBJECT
608
LOCATE WAITING THREADS
610
LOCATE LOCKING THREADS
612
COMPARE WAITING AND LOCKING THREAD IDs
NOT THE SAME
SAME (WAITING ON ITSELF)
POPULATE 2D MATRIX
616
END OF LOCKED OBJECTS ?
618
NO
YES
PERFORM ALGORITHM TO DETECT CIRCULAR WAIT
620
END OF LOCKED OBJECTS ?
614
YES
NO
DISPLAY RESULTS TO USER
622

FIG. 6